CS Web Portal – Finding a Framework

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Overview

- **CS Student Web Portal**
  - Developed on and maintained by sophomore class
    - Each new year will add-on and maintain
  - Used by entire CS Department
    - Students
      - Handing in assignments, viewing class data
    - Professors
      - Building class pages, communicating with students
    - Teachers Assistants
      - Grading Assignments

Thesis Topic

- Finding optimal portal framework that accomplishes two key objectives:
  - Extensible and easy enough to use that sophomore students can develop within framework and learn good principles while doing so
  - Feature set that is ideal for a university student portal

What is a Web Portal?

- Centralized location of web information

- Personalized to a users needs

- Community Interaction

- Content aggregation from different sources

- Broad range of resources and services

  - Single sign-on, navigation, message boards, user management, search, links

Examples of Portals

- Google, Yahoo, CNET.com, My.Utah.edu

Motivation for CS Portal

- Development opportunity for sophomores
  - Team environment
  - Develop on existing code-base
  - Long life-cycle
- Benefit users
  - Simplify making class web pages
  - Easy for students to navigate

What is a Portal Framework?

- Infrastructure that portal is built on top of
    - Set of technical specifications and software
    - Portal Server with interfaces for customization
- Often provides core set of reusable components
- Support for personalization and single sign-on
- Modular and extensible
- Integration Support

Existing Portal Frameworks

Portal Framework	URL
Liferay 3.6.1	http://sourceforge.net/projects/lportal
Zope	http://www.zope.org/
uPortal (JA-SIG)	http://www.ja-sig.org/
Apache Jetspeed-2	http://portals.apache.org/jetspeed-2/
JBoss Portal	http://www.jboss.com/products/jbossportal
OpenCMS	http://www.opencms.org/opencms/en/index.html
MetaDot	http://www.metadot.com/index_static.html
Pluto	http://portals.apache.org/pluto/
Gridsphere Portal	http://www.gridsphere.org/gridsphere/
DotNetNuke	http://www.dotnetnuke.com/
IMB WebSphere	http://www.ibm.com/websphere/portal
Microsoft Sharepoint	http://www.microsoft.com/.../sharepoint/default.mspx

Portal Architecture
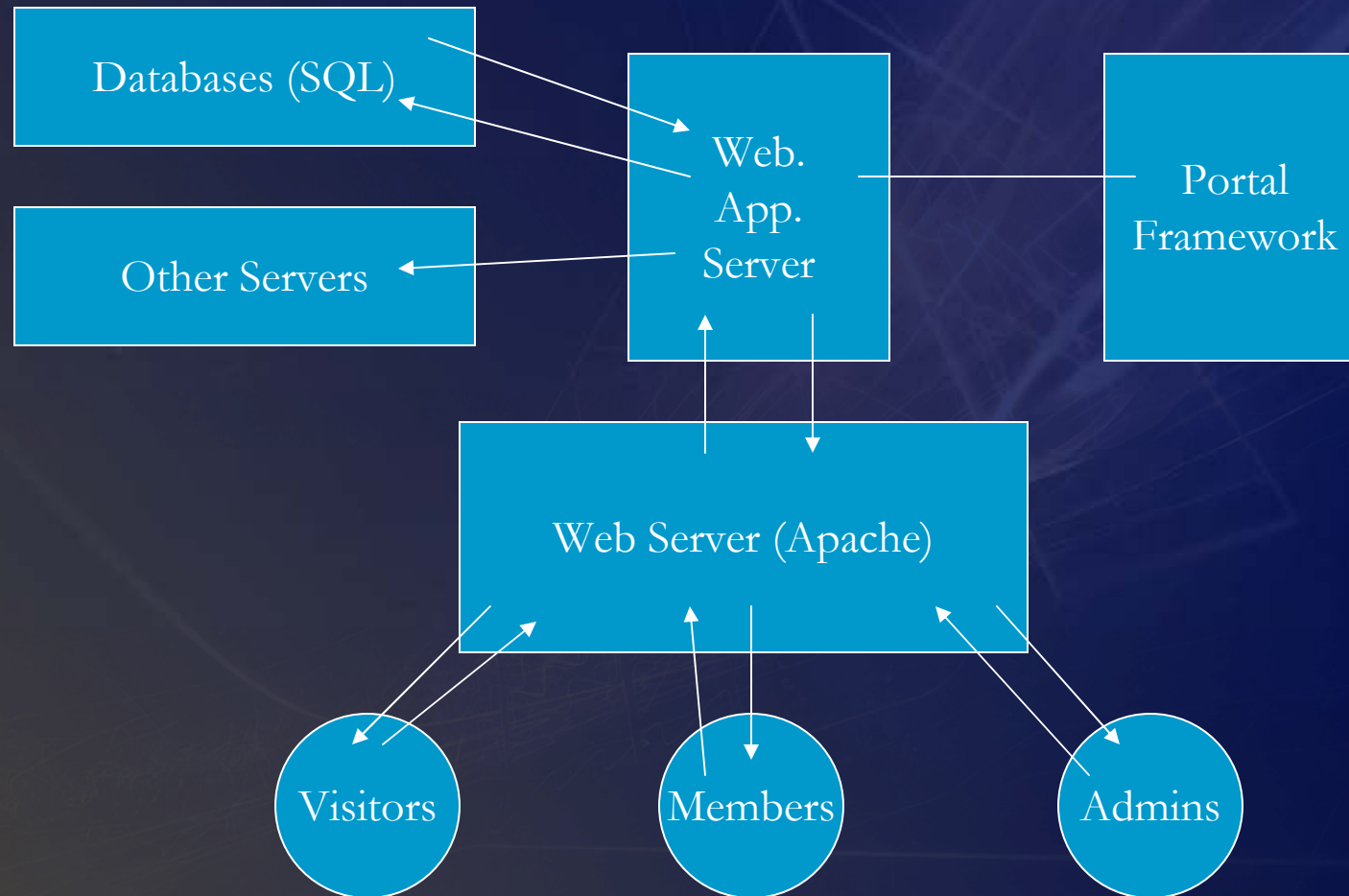
Effort Details

- Selecting Frameworks
  - Select top four frameworks to build sample portals
- Designing a sample portal
  - Serve as proof-of-concept
- Constructing Portals
  - Develop sample portal in each framework
- Finalize Thesis

Selecting Frameworks

- After researching existing portal frameworks, select four to build sample portal
- Pick frameworks that leverage different technologies (JAVA, .NET, portlets, etc.)
- Select frameworks best-suited for project
  - Ease-of-Use, Extensibility, Modular
  - Secure

Designing a Sample Portal

Navigation Box

Login

Class Info

Class Links

View Assignments
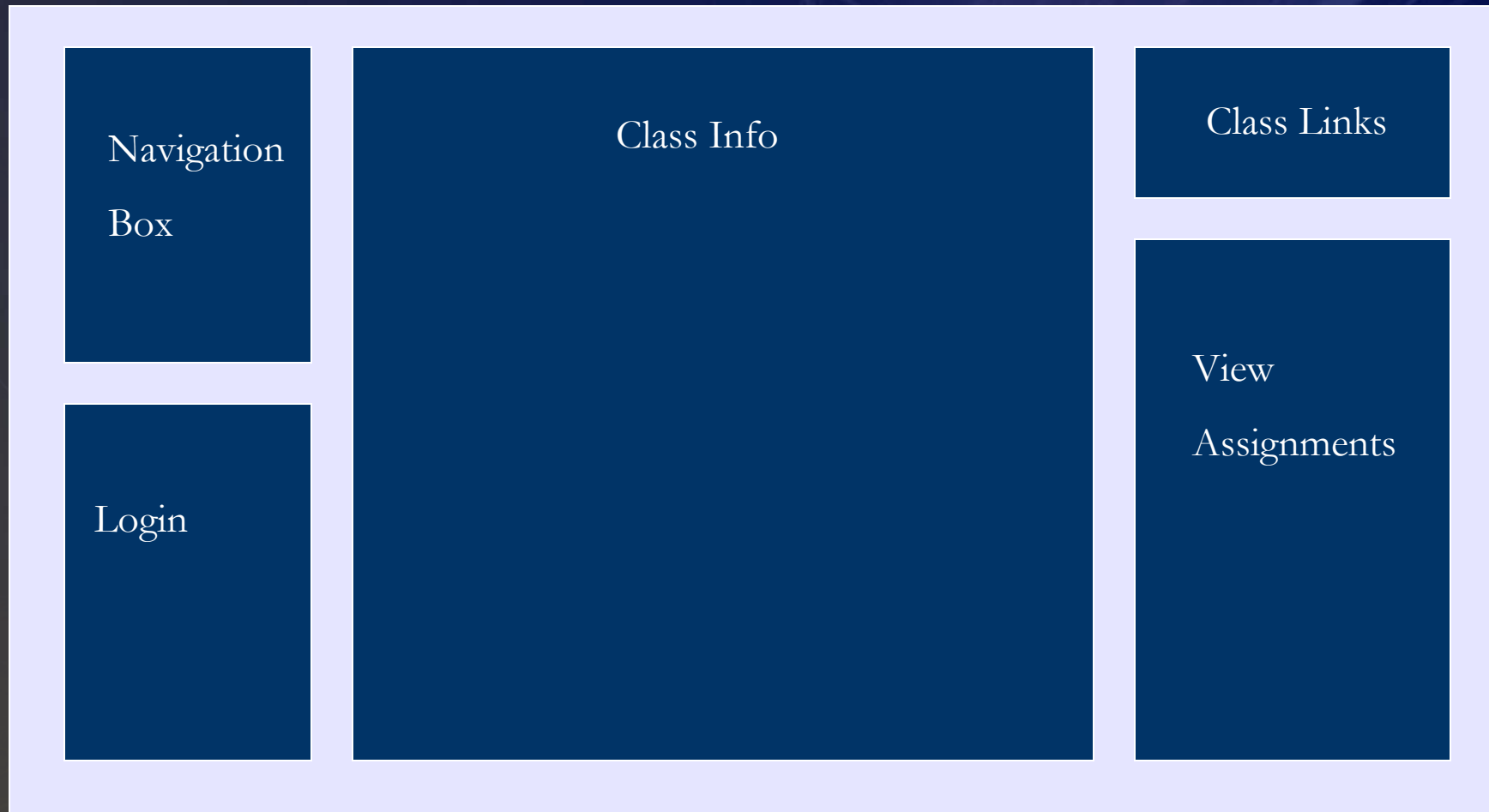
Constructing Portals

- Build sample portal according to design specification in each of the selected portal frameworks
  - Initially install framework and framework container (server)
- Develop and unit test each module
- Black-Box test portal after completion to ensure it is end-user friendly

Finalize Thesis

- Put finishing touches on thesis paper
- Compare/Contrast development experience and feature set of each selected framework
- Make a recommendation based on research and development experience

Related Work

- Naval Postgraduate School – Web Portal Design, Execution and Sustainability for Naval Websites and Web Services
  - Masters thesis to evaluate how portals would work for Navy infrastructure
- Developing a student web portal at the University of Bristol
  - Ongoing project to develop university portal

Related Work Cont.

- Building a university portal, the SCWEIMS experience
  - Selecting best portal software for university portal
- University of Pretoria, Design and Development of an Academic Portal
  - Design and development of an academic portal
- Developing a portal at the University of Georgia
  - Create centralized student web portal

Schedule

ID	Task Name	Duration	Start	Finish
1	Research of Existing Portal Frameworks	48 days?	Wed 3/1/06	Fri 5/5/06
2	Design of Sample Portal	18 days?	Mon 5/8/06	Wed 5/31/06
3	Portal #1 Construction	30 days?	Thu 6/1/06	Tue 7/11/06
4	Portal #2 Construction	30 days?	Wed 7/12/06	Mon 8/21/06
5	Portal #3 Construction	30 days?	Tue 8/22/06	Mon 10/2/06
6	Portal #4 Construction	30 days?	Tue 10/3/06	Mon 11/13/06
7	Finalize Thesis	15 days?	Tue 11/14/06	Mon 12/4/06

University of Utah - Senior Thesis
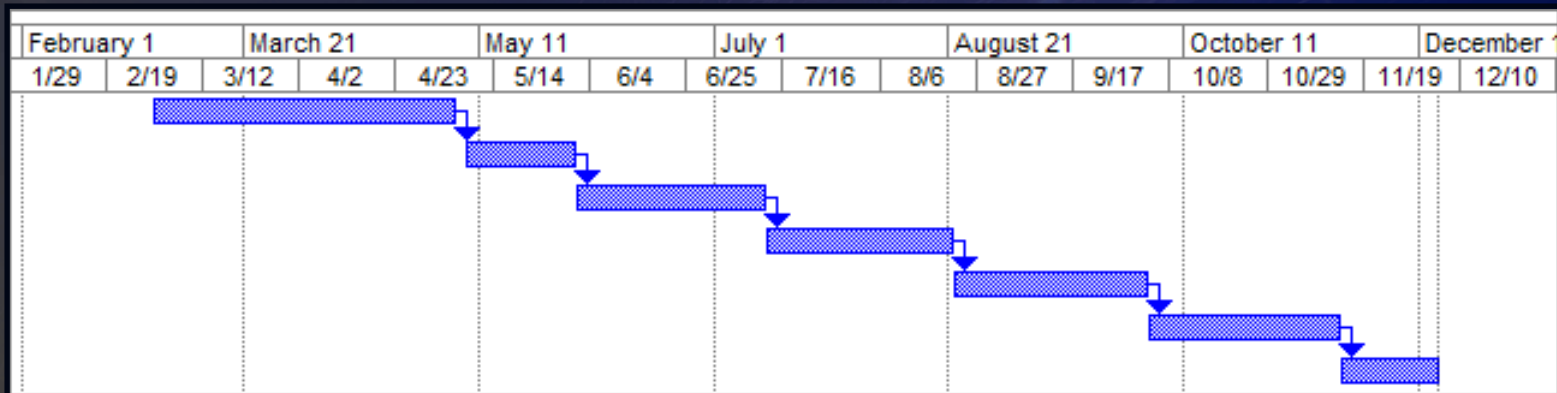
Successful End

- Able to determine which framework is best-suited and why
- CS student web portal is launched and students/faculty benefit from it

Questions?